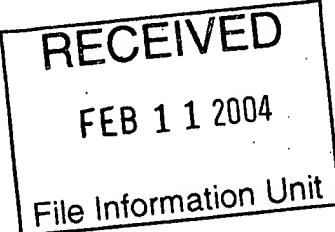


Under the Paperwork Reduction Act of 1995, no burdens are required to respond to a collection of information unless it displays a valid OMB control number.

REQUEST FOR ACCESS TO AN ABANDONED APPLICATION UNDER 37 CFR 1.14

Bring completed form to:
 File Information Unit
 Crystal Plaza Three, Room 1001
 2021 South Clark Place
 Arlington, VA
 Telephone: (703) 305-2733



In re Application of

Application Number

Filed

08-149508 11-9-93

Paper No. #18

I hereby request access under 37 CFR 1.14(a)(1)(iv) to the application file record of the above-identified ABANDONED application, which is identified in, or to which a benefit is claimed, in the following document (as shown in the attachment):

United States Patent Application Publication No. _____, page, _____ line _____.

United States Patent Number 5851832, column _____, line, _____ or

WIPO Pub. No. _____, page _____, line _____.

Related Information about Access to Pending Applications (37 CFR 1.14):

Direct access to pending applications is not available to the public but copies may be available and may be purchased from the Office of Public Records upon payment of the appropriate fee (37 CFR 1.19(b)), as follows:

For published applications that are still pending, a member of the public may obtain a copy of:

the file contents;

the pending application as originally filed; or

any document in the file of the pending application.

For unpublished applications that are still pending:

- (1) If the benefit of the pending application is claimed under 35 U.S.C. 119(e), 120, 121, or 365 in another application that has: (a) issued as a U.S. patent, or (b) published as a statutory invention registration, a U.S. patent application publication, or an international patent application publication in accordance with PCT Article 21(2), a member of the public may obtain a copy of:

the file contents;

the pending application as originally filed; or

any document in the file of the pending application.

- (2) If the application is incorporated by reference or otherwise identified in a U.S. patent, a statutory invention registration, a U.S. patent application publication, or an international patent application publication in accordance with PCT Article 21(2), a member of the public may obtain a copy of:

the pending application as originally filed.

ACSignature
ADRIAN

Typed or printed name

Z-11-04

Date

RECEIVEDApproved FEB 11 2004 Adrian

File Information Unit

Registration Number, if applicable

7-4861150

Telephone Number



US005851832A

United States Patent [19]**Weiss et al.****[11] Patent Number: 5,851,832****[45] Date of Patent: Dec. 22, 1998****[54] IN VITRO GROWTH AND PROLIFERATION OF MULTIPOTENT NEURAL STEM CELLS AND THEIR PROGENY**

[75] Inventors: Samuel Weiss; Brent Reynolds, both of Alberta, Canada; Joseph P. Hammang; E. Edward Baetge, both of Barrington, R.I.

[73] Assignee: Neuronspheres, Ltd., Canada

[21] Appl. No.: 486,648

[22] Filed: Jun. 7, 1995

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 270,412, Jul. 5, 1994, abandoned, which is a continuation of Ser. No. 726,812, Jul. 8, 1991, abandoned, and a continuation-in-part of Ser. No. 385,404, Feb. 7, 1995, abandoned, which is a continuation of Ser. No. 961,813, Oct. 16, 1992, abandoned, which is a continuation-in-part of Ser. No. 726,812, and Ser. No. 359,945, Dec. 20, 1994, abandoned, which is a continuation of Ser. No. 221,655, Apr. 1, 1994, abandoned, which is a continuation of Ser. No. 967,622, Oct. 28, 1992, abandoned, which is a continuation-in-part of Ser. No. 726,812, Jul. 8, 1991, abandoned, and Ser. No. 376,062, Jan. 20, 1995, abandoned, which is a continuation of Ser. No. 10,829, Jan. 29, 1993, abandoned, which is a continuation-in-part of Ser. No. 726,812, and Ser. No. 149,508, Nov. 9, 1993, abandoned, which is a continuation-in-part of Ser. No. 726,812, and Ser. No. 311,099, Sep. 23, 1994, abandoned, which is a continuation-in-part of Ser. No. 726,812, and Ser. No. 338,730, Nov. 14, 1994, abandoned, which is a continuation-in-part of Ser. No. 726,812.

[51] Int. Cl.⁶ C12N 5/06; C12N 5/08;
C12N 5/02

[52] U.S. Cl. 435/368; 435/325; 435/366;
435/383; 435/384

[58] Field of Search 435/240.2, 325,
435/366, 368, 377, 383, 384

[56] References Cited**U.S. PATENT DOCUMENTS**

4,753,635	6/1988	Sagen et al. 604/49
4,980,174	12/1990	Sagen et al. 424/563
5,082,670	1/1992	Gage 424/520
5,175,103	12/1992	Lee et al. 435/172.3
5,411,883	5/1995	Boss et al. 435/29
5,612,211	3/1997	Wilson et al. 435/378

FOREIGN PATENT DOCUMENTS

0 233 838	8/1987	European Pat. Off.	.
89/03872	5/1989	WIPO	.
90/06757	6/1990	WIPO	.
91/02003	2/1991	WIPO	.
91/09936	7/1991	WIPO	.
91/17242	11/1991	WIPO	.
93/01275	1/1993	WIPO	.
93/09802	5/1993	WIPO	.
94/03199	2/1994	WIPO	.

OTHER PUBLICATIONS

Almazan et al., "Epidermal Growth and Bovine Growth Hormone Stimulate Differentiation and Myelination of Brain Cell Aggregates in Culture," *Developmental Brain Research*, 21:257-264 (1985).

Anchan et al., "Trophic Factors Influence Proliferation of Germinal Neuroepithelial Cells of the Retina," *J. Cell Biol.*, 109:58a, Abstract No. 308 (1989).

Anchan et al., "EGF and TGF- α Stimulate Retinal Neuroepithelial Cell Proliferation in Vitro," *Neuron*, 6(6):923-936 (1991).

Bayer et al., "Neuron production in the Hippocampus and olfactory bulb of the adult rat Brain: addition or replacement?", *Annals NY Acad. Sci.* 457:163-172 (1985). ☐

Björklund et al., "Neural Grafting in Animal Models of Neurodegenerative Diseases," *Ann. New York Acad. Sci.*, 457:53-81 (1985).

Bouvier et al., "Basic Fibroblast Growth Factor (bFGF) Promotes the Survival and Proliferation of Mesencephalic Neuronal Precursors in Vitro," *Society for Neuroscience Abstracts*, vol. 18, Abstract No.: 403.7 (1992).

Boyles et al., "Accumulation of Apolipoproteins in the Regenerating and Remyelinating Mammalian Peripheral Nerve," *J. Biol. Chem.*, 265(29):17805-17815 (1990).

Calof et al., "Analysis of Neurogenesis in a Mammalian Neuroepithelium: Proliferation and Differentiation of an Olfactory Neuron Precursor in Vitro," *Neuron*, 3:115-127 (1989).

Cattaneo et al., "Identifying and Manipulating neuronal stem cells," *TINS*, 14(8): 338-340 (1991).

Cattaneo et al., "Proliferation and differentiation of neuronal stem cells regulated by nerve growth factor," *Nature*, 347:762-765 (1990). ☐

Cepko "Immortalization of neural cells via retrovirus-mediated oncogene transduction," *Ann. Rev. Neurosci.*, 12:47-65 (1989).

Deloulme et al., "Establishment of Pure Neuronal Cultures From Fetal Rat Spinal Cord and Proliferation of the Neuronal Precursor Cells in the Presence of Fibroblast Growth Factor," *Journal of Neuroscience Research*, 29:499-509 (1991).

Dunnett et al., "Dopamine-rich transplants in experimental Parkinsonism," *TINS*, 266-270 (Jul. 1983).

Emerich et al., "Behavioral Effects of Neural Transplantation," *Cell Transplantation*, 1:1-27 (1992).

Faaland et al., "Rapid uptake of tyrophostin into A431 human epidermoid cells is followed by delayed inhibition of epidermal growth factor (EGF)-stimulated EGF receptor tyrosine kinase activity", *Mol. Cell Biol.* 11(5):2697-2703 (1991).

(List continued on next page.)

Primary Examiner—George C. Elliott**Assistant Examiner—Johnny F. Railcy, II****Attorney, Agent, or Firm—Flehr Hohbach Test Albritton & Herbert LLP****[57]****ABSTRACT**

A method for the in vitro proliferation and differentiation of neural stem cells and stem cell progeny comprising the steps of (a) isolating the cells from a mammal, (b) exposing the cells to a culture medium containing a growth factor, (c) inducing the cells to proliferate, and (d) inducing the cells to differentiate is provided.

80 Claims, 3 Drawing Sheets